Extract of a Letter from Mr. Butterfield *Mathematique Inſtrument-maker to the French King, about the making of Microſcopes with very ſmall and ſingle Glaſſes: and of ſome other Inſtruments.*

I Doubt not but you may be as buſie at *London* as we are here in making of Microſcopes of the manner lately brought out of *Holland* by Mr. *Huigens*, whereof I have of ſeveral faſhions ready made. I have tried ſeveral ways for the making of Glaſſes of the bigneſs of a great Pins head and leſs; as in the flame of a Tallow-candle, and of one of Wax. But the beſt way of all I have yet found, to make them clear and without ſpecks, is with the flame of Spirit of Wine well rectified, and burned in a Lamp. Inſtead of Cotton I make uſe of very ſmall ſilver wire doubled up and down like a skein of thred; which being wet with the Spirit of Wine, and made to burn in the Lamp, giveth through the veril of the Lamp a very ardent flame. Then take your beaten Glaſs, being firſt waſhed very clean, upon the point of a Silver needle filed very ſmall, and wet with ſpittle. Hold it thus in the flame till it be quite round, and no longer for fear of burning it, and if the ſide of the Glaſs next the needle be not melted, you may put it off and take it up with the needle on the round ſide, preſenting the rough ſide to the flame till it be every where very round and ſmooth, then wipe and rub one or ſeveral of them together with ſoft leather, which makes them much the better. Then put them between two pieces of thin braſs, the Apertures very round and without bur, and that towards the eye ſo big almoſt as the diameter of the Glaſs: and ſo placed in a Frame with the object conveniently for obſervation.

I publiſhed laſt year in the *Journal de Scavans* a trial of mine Invention with a Tube with Glaſſes and a Thred hanging between four points, with a weight in a Box ſo contrived, that as ſoon as the Inſtrument is ſet down, you have your point of Horzon with a great deal of exactneſs. It hath been ſo well approved of, that the River which the King maketh to come twenty Leagues off to *Paris*, is conducted by it,

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At preſent I am finiſhing another. Inſtead of four points it playeth on one Steel point, ſtanding on a Diamond: the making of which I do intend to publiſh. I hope it will be of great uſe for its exactneſs and ſpeedineſs of working.

I am at preſent making a ſilver Planiſphere of two foot diameter for the King; the Invention of that famous Aſtronomer, and my very good friend, Mr. *Caſſini*. It ſheweth a very eaſie way to know and find out moſt of the fixed Stars, and the hour of the night very ſpeedily.

Extract of a Letter from Mr. John Conyers, *of his Improvement of Sir* Samuel Moreland's *ſpeaking Trumpet, &c.*

HAving ſome years ſince try'd to make one of Sir *S. Moreland's ſpeaking Trumpets* of Tin, that is, tinned Iron Plate; and finding it to ſerve, as well as Copper or Glaſs; I thereupon thought of ſeveral ways for reducing the ſame into ſome more contracted form, without abating its power: and by Dr. *Goddard* preſented to the Royal Society, at one of their Meetings (then uſually at *Arundel Houſe*) the *Reflecting Trumpet* here figured. It conſiſteth of two Parts. The utmoſt (B b) is a large *Concave Pyramid*, about a yard long, (or may be of any managable length) open at the *baſe* (b), and cloſed, not with a *flat*, but a *concave head*, at the *Cone* (B). Within this is faſtned a bended *Tube* (A a) as in the *Figure*. In the preſence of the *Royal Society* it was then alſo experimented, That this *Trumpet* did diſtinctly deliver certain words from the ſaid Houſe croſs the Garden, and the River *Thames*, and that againſt the *Wind* which was then ſtrong: and the words were written down by one that was ſent over for that purpoſe. Whereby it appeared, That a *Reflecting Trumpet* after this or ſome other like manner, of Wood, Tin, Pewter, Stone or Earth, or which may be beſt, of Bell mettle, will carry the voice as far, if not farther, than the *long* one invented by Sir *Samuel Moreland*. Beſides that it ſeems to take off from the aſtoniſhing noyſe near at hand, which happens in the uſe of the ſaid long Trumpet; ſo that it may be uſed within doors, with advantage, upon ſeveral occaſions.

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